On-Spot Rheumatology Consultations in a Multilevel Geriatric Hospital

Emily Lubart MD, Arthur Leibovitz MD, Vadim Shapir MD and Refael Segal MD

Department of Geriatric Medicine, Shmuel Harofeh Geriatric Medical Center, Beer Yaakov, affiliated with Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

ABSTRACT: **Background:** Musculoskeletal and joint disorders are extremely common in the elderly. They directly affect mobility, gait stability, quality of life, and independence.

Objectives: To assess the nature of joint problems encountered in a geriatric inpatient population and evaluate the contribution of a rheumatologist.

Methods: We reviewed the rheumatology consultation records that were conducted in a geriatric medical center over a 10 year period.

Results: A total of 474 consultations were held; most of these patients (86%) were hospitalized in the acute geriatric departments, 10% in the rehabilitation ward and 4% in the long-term care wards. Some patients were seen more than once. A rheumatologic joint problem was the main reason for hospitalization in 53% of these patients. Monoarthritis was the most frequent complaint (50%), followed by pauci-articular arthritis (two to five joints) in 30% of patients. Arthrocentesis, diagnostic and therapeutic, was performed in 225 patients, most of them in knee joints (81%). The most frequent diagnosis was osteoarthritis with acute exacerbation (28%), followed by gout (18%), pseudo-gout (9%) and rheumatoid arthritis (9%). In 86 cases (18%) the diagnosis was a non-specific rheumatologic problem: arthralgia, non-specific generalized pain, or fibromyalgia.

Conclusions: Prompt and appropriate evaluation, as well as arthrocentesis and treatment initiation, including local injections, were made possible by the presence of an in-house rheumatologist.

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KEY WORDS: musculoskeletal and joint disorders, rheumatologic consultations, multilevel geriatric hospital

Musculoskeletal and rheumatologic joint disorders in elderly persons are extremely common, afflicting approximately 80% of the population by retirement age [1-3]. In this age group, such conditions may affect mobility, quality of life and independence, and may ultimately lead to placement in a nursing home [4]. The diagnosis and management of a rheumatic disorder in elderly patients is often complicated. Atypical manifestations of an acute rheumatic problem may be obscured by the presence of age-related comorbid conditions that cause pain and immobility, such as osteoarthritis, osteoporosis, and spinal and neurological symptoms. The management of rheumatic problems is also complicated by the high rate of adverse drug events, due to non-steroidal anti-inflammatory drugs in particular [5].

Osteoarthritis is the most common condition affecting synovial joints and the major cause of locomotor disability. It is the most frequently encountered arthropathy in geriatric practice [5]. Slightly less common are gout and pseudo-gout. Acute stress may trigger attacks of crystal-induced arthritides in the elderly. In the elderly, gout may manifest as an acute typical form or as chronic polyarticular arthritis. Polymyalgia rheumatica and temporal arteritis are typical diseases of the older population, and prompt diagnosis and treatment is essential. Another problem is hemarthrosis, mainly in patients on anticoagulation who have a tendency to fall [6].

In this population septic arthritis should always be considered, particularly in those who are immunosuppressed; in patients in long-term care facilities with devices such as a urinary catheter, intravenous line, or feeding tube (percutaneous gastrostomy or jejunostomy); in diabetics; in patients on corticosteroids; and following orthopedic surgery. Non-age-dependent rheumatologic disorders, such as rheumatoid arthritis, may occur at any age. A typical late onset of rheumatoid arthritis is often abrupt with peripheral symmetric pain and prominent hand edema [7,8].

We found no previous report on rheumatologic disorders among hospitalized elderly patients. In this study we assessed the array of musculoskeletal and rheumatologic disorders seen by a rheumatologist in a multilevel geriatric hospital over a 10 year period.

PATIENTS AND METHODS

This was a retrospective study of the consultations performed in patients hospitalized in the Shmuel Harofeh Geriatric Medical Center, based on a review of the medical reports for a 10 year period, 1998 to 2008. The hospital has 350 beds with nearly 2000 hospitalizations per year. There are three acute geriatric wards (median turnover 7 days), one rehabilitation department (median turnover 20 days) and four long-term care wards (highly diverse turnover). The rheumatologist was

asked for a consultation following the initial evaluation by a geriatrician only in cases of severe joint problems such as acute arthritis, joint pain > grade 3 on the Visual Assessment Scale, or pain causing functional deterioration.

All consultations, including diagnostic interventions, clinical evaluations and treatment recommendations, were completed and presented to the caring physician's team within 24 hours. The reports of the rheumatology consultations were made by the same specialist over the 10 year period.

SPSS software was used for statistical processing (Student's *t*-test, chi-square test). Descriptive analysis included frequencies and distributions of all study variables.

RESULTS

Over a 10 year period, 474 on-spot rheumatology consultations were performed in our multilevel geriatric hospital. Most of the cases, 407 (86%), were hospitalized in the three acute geriatric departments, 47 (10%) were in the rehabilitation unit and 20 (4%) in the four long-term care wards. In order to establish the diagnosis and treatment some patients were seen more than once. Demographic data are shown in Table 1, and data on the rheumatologic problem of these patients are shown in Table 2. The rheumatic disorder was the reason for admission in half the patients from the acute care departments: 215 of 407 (53%). In 48% of the remaining patients the problem emerged within the first few days after admission.

Presenting symptoms were typical of acute inflammation: pain (93%), swollen joints (61%), local heat (21%), and fever (16%). Recent immobilization was a frequent cause of hospitalization (70%). Monoarticular arthritis was common, appearing in 50% of the patients, while pauci-articular arthritis (two to five joints) was found in 30%.

Procedures for investigation and treatment included arthrocentesis in 225 patients (47%), predominantly (81%) of the knee joints. In 146 (65%) of these patients, fluid was obtained for microscopic evaluation. The most frequent inflammatory diagnoses were non-specific inflammatory fluid (without crystals) in 31%, pseudo-gout in 29%, and gout in 19%. In 14% of patients the fluid was not inflammatory. Rare cases were hemarthrosis (5%) and septic arthritis (1%).

Most patients, 253 (53%), received pharmacological interventions, anti-inflammatory drugs (44%) and corticosteroids (19%), with most treated concomitantly with intraarticular injections.

Table 3 presents the consultant's diagnoses; most frequent was osteoarthritis (28%), with acute arthritis in 9%. Gout (18%) was not always diagnosed by arthrocentesis and in most cases the diagnosis was based on clinical data. Pseudo-gout (9%) was always diagnosed by microscopy. Cases with rheumatoid arthritis (9%) were not rare, some with disease exacerbation, others with new onset of the disease. Eighty-six cases (18%) were diagnosed as non-specific rheumatologic problems: arthralgia, non-specific generalized pain, or fibromyalgia.

Intra-articular injections of corticosteroids were administered in almost all cases except those with a high suspicion of septic arthritis, including 79 cases with no joint effusion. There was no case of infection or any other complication. Tendon and trigger-point injections were performed in 26 cases. These were highly efficacious, with 91% of patients reporting improvement. Most procedures resulted in return of the patient to his or her previous state of ambulation.

Table 1. Data on patients with rheumatologic problems admitted to the geriatric center

	n (%)
Total consultations	474
Female/Male	280/194
Age (mean) (yr)	79 ± 8
Range	49–101
Departments	
Acute	407 (86%)
Rehabilitation	47 (10%)
Skilled nursing patients	20 (4%)
Time in hospital	
‹ 1 week	228 (48%)
1 week–1 month	246 (52%)
Hospitalization due to rheumatic disease	215 (53%)*
Type of arthritis	
Mono-arthritis	237 (50%)
Pauci-arthritis (2–5 joints)	143 (30%)
Polyarthritis (6+ joints)	8 (2%)
Others**	86 (18%)

*Of 407 patients seen in the acute departments

** Arthralgia, non-specific generalized pain, fibromyalgia

Table 2. Treatment/interventions by the rheumatologist

Pharmacological	253 (% of 253)
NSAIDs or cyclooxygenase inhibitor	112 (44%)
Corticosteroids (per os or intramuscularly)	74 (19%)
Colchicin/Allopurinol	85 (23%)
Methotrexate	35 (14%)
Others	22 (6%)
Arthocentesis	225 (% out of 225)
Knee	182 (81%)
Shoulder	20 (9%)
Elbow	6 (2.5%)
Wrist & fingers	6 (2.5%)
Ankle	6 (2.5%)
Foot	6 (2.5%)
Diagnostic microscopy	146 (% out of 146)
Gout	28 (19.2%)
Pseudogout	43 (29.4%)
Inflammatory	45 (31%)
Non-inflammatory	21 (14.4%)
Hemarthrosis	7 (5%)
Septic	2 (1%)
Joint injection (dry)	79
Injections to trigger points	26

Table 3. Diagnosis of rheumatologic consultation

	n (%)
Osteoarthritis	132 (28%)
Acute arthritis, not defined	43 (9%)
Gout	85 (18%)
Pseudo-gout	43 (9%)
Hemarthrosis	8 (2%)
Rheumatoid arthritis	43 (9%)
Polymyalgia rheumatica	10 (2%)
Temporal arteritis	6 (1.2%)
Back problems	16 (3.3%)
Infectious (septic arthritis)	2 (0.4%)
Others*	86 (18%)

*Arthralgia, non-specific generalized pain, fibromyalgia

DISCUSSION

During the 10 years, 474 rheumatology consultations were performed in the geriatric medical center. In 215 (53%) of the cases, the rheumatic problem was the reason for hospitalization in the acute department. As expected, most of the cases represented joint disorders; the most common diagnosis was osteoarthritis-related problems (28%), with one-third being acute exacerbation with non-specific arthritis. The second most common diagnosis was gouty arthritis (18%), and the third was pseudo-gout (9%).

Only a few studies have been published on rheumatologic problems in elderly patients in nursing homes or skilled nursing care departments [9-13]. One study reported a 23% incidence of "non-specific arthritis" among residents of five nursing homes in the United States. Arthritis itself was a major cause of nursing home placement in 15% of all residents without dementia. Among those without dementia who also had arthritis, in 31% arthritis was a major cause of institutionalization [14]. Another study surveying an estimated 1.6 million nursing-home residents reported that only 3% had a primary arthritis diagnosis and 19% any type of arthritis diagnosis at admission [4]. Not surprisingly, patients with the diagnosis of arthritis received more assistance in walking and transferring compared to those with no arthritis [4].

With regard to fibromyalgia and chronic widespread pain, some studies are researching the prevalence of the problem in the community-dwelling elderly. While the prevalence of fibromyalgia varied from 0.3% to 5.4% in the population, it was highest (9%–14%) in women aged 50–74 years old. As the population ages, fibromyalgia becomes an increasing public health problem [15-17]. In our hospitalized elderly population, complaints of arthralgia, non-specific musculoskeletal pain and fibromyalgia are abundant. However, since the geriatric medical staff in this center is well trained to deal with these complaints, the rheumatologist was required to evaluate these patients only rarely.

The need for an accurate early diagnosis followed by prompt and appropriate treatment of a rheumatic disorder in the elderly is essential to avoid pain, alleviate suffering and prevent dysfunction. The diagnosis may be complicated due to many factors associated with aging: musculoskeletal, neurological, mental, radiological and more. Equally important is the avoidance of irrelevant and harmful treatments, mainly NSAIDS. The need for specific procedures such as bedside arthrocentesis, microscopic inspection of joint fluid, and local injections provided on the spot is obvious. This procedure may diagnose crystal-induced arthritis, thus ruling out the possibility of a false clinical diagnosis of septic arthritis and unnecessary prolonged antibiotic treatment. The procedure performed on the spot obviates transportation to a general hospital for consultation. Furthermore, exposure to this procedure is educational for the medical staff, including residents in geriatrics.

Our results emphasize the beneficial role of a rheumatologist in the team of a multilevel geriatric facility.

Corresponding author:
Dr. E. Lubart
Dept. of Geriatric Medicine, Shmuel Harofeh Medical Center, P. O. Box 2, Beer Yaakov 70300, Israel
Fax: (972-8) 925-8665
email: elubart@hotmail.com

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NSAIDs = non-steroidal anti-inflammatory drugs

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“What I like in a good author isn’t what he says, but what he whispers”

Logan Pearsall Smith (1865-1946), American-born British essayist and critic